
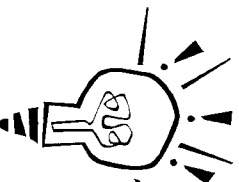
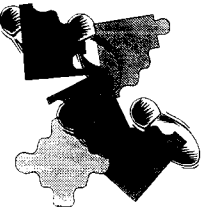

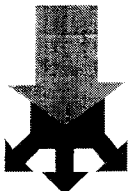
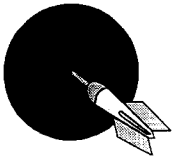



# 5-E Constructivist Lesson Planner

## Middle School Science

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| <b>Essential Curriculum Indicators:</b> 40.B.1.a   |  | <b>SWBAT:</b> <u>Students Will Be Able To:</u><br>Determine density using mathematical formula<br>Measure volume and mass<br>This supports indicator _____  |
| <b>Lesson Component</b>  | <b>Points for Self-Assessment</b><br>Y = Yes, N = No   | <b>Plans / Notes / Materials</b><br>T = Teacher, S = Student  |
| <b>Warm-Up</b><br> | Connects to prior learning?<br>Bridges prior with anticipated learning?<br>More than simple recall of information?   | How would you find the mass of water?<br>- measure mass of empty beaker<br>- Measure mass of full beaker subtract mass of empty beaker from full beaker.  |
|  <b>Engage</b>       | Motivates students through thought provoking experiences?<br>Sets the scene for:<br>key questions?<br>objectives?<br>performance expectations?   | Divide into groups of three and practice balancing the triple beam balance<br>Safety: Demonstrate proper handling of the triple beam balance.<br>Key Question: What is the density of water?          |
| <b>Explore</b><br>  | Opportunities to confront misconceptions?<br>Evidence the teacher has thought through the planning process?<br>Teacher models or "guides on the side" as necessary?<br><i>Concepts are revealed, identified, explored</i>        | Research: Density is a measurement of how much matter is packed into a given volume of a substance.<br>Hypothesize density of water using if then because statement. See attached for example.        |
| <b>Explain</b><br>  | Students communicate what they learn?<br>Teacher cues for feedback to reveal what students have uncovered?<br>Teacher shares information critical to solidifying understandings?<br><i>Concepts from "explore" are organized</i> | Follow procedures to execute lab. See attached.<br>Complete data table: subtract empty mass from filled mass to determine mass of water. Use formula for density.<br>Identify variables: see attached |

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| <p><b>Extend</b></p>   | <p>Lesson forces students to look at concepts in a different way?<br/>Students use tools to revise/refine?<br/>Opportunities for student choice?</p>                    | <p>What other liquids are you interested in finding the density of? Allow students to choose from a pre-selected group of liquids.<br/>Example: kool aid, rubbing alcohol, vegetable oil etc.</p> |
|  <p><b>Evaluate</b></p> | <p>Performance/assessment addresses stated objective(s)?<br/>Reflects initial explanation of same?<br/>Homework component?</p>  | <p>Conclusion: answer key questions -- see attached.</p>  |
| <p><b>Closure</b></p>   | <p>Objectives are revisited?<br/>Students are asked "how" they met the objectives? (metacognition)<br/>Teacher spikes interest in how<br/>Today -----&gt; tomorrow?</p> | <p>Does the density of water change as the temperature of water change. Why are why not?</p>  |
| <p><b>Other:</b></p> <p><b>Objective(s)</b></p>   | <p>Supports essential curriculum?<br/>Activities matched terminology in terms of rigor and intent?</p>  |   |
| <p><b>H.O.T.S.</b></p>  | <p>Questions forced students to think at higher levels?<br/>(See attached sheet for indicators)<br/>Higher Order Thinking Skills</p>                                    |   |
| <p><b>Classroom Climate</b></p>   | <p>Mutual respect is evident?<br/>Student products are on display?<br/>Scenery invites thinking and learning?</p>   | <p>Pd. 1/2 :<br/>Pd. 3/4:<br/>Pd. 5/6:</p>  |